

Figure 1

* Platform 42 is attached to, joins, and covers both moving blocks 92 and 95. Platform 42 joins, spans, and covers points A, B, C, and D. Platform 42 does not make contact with support 30C, or with shafts 40.

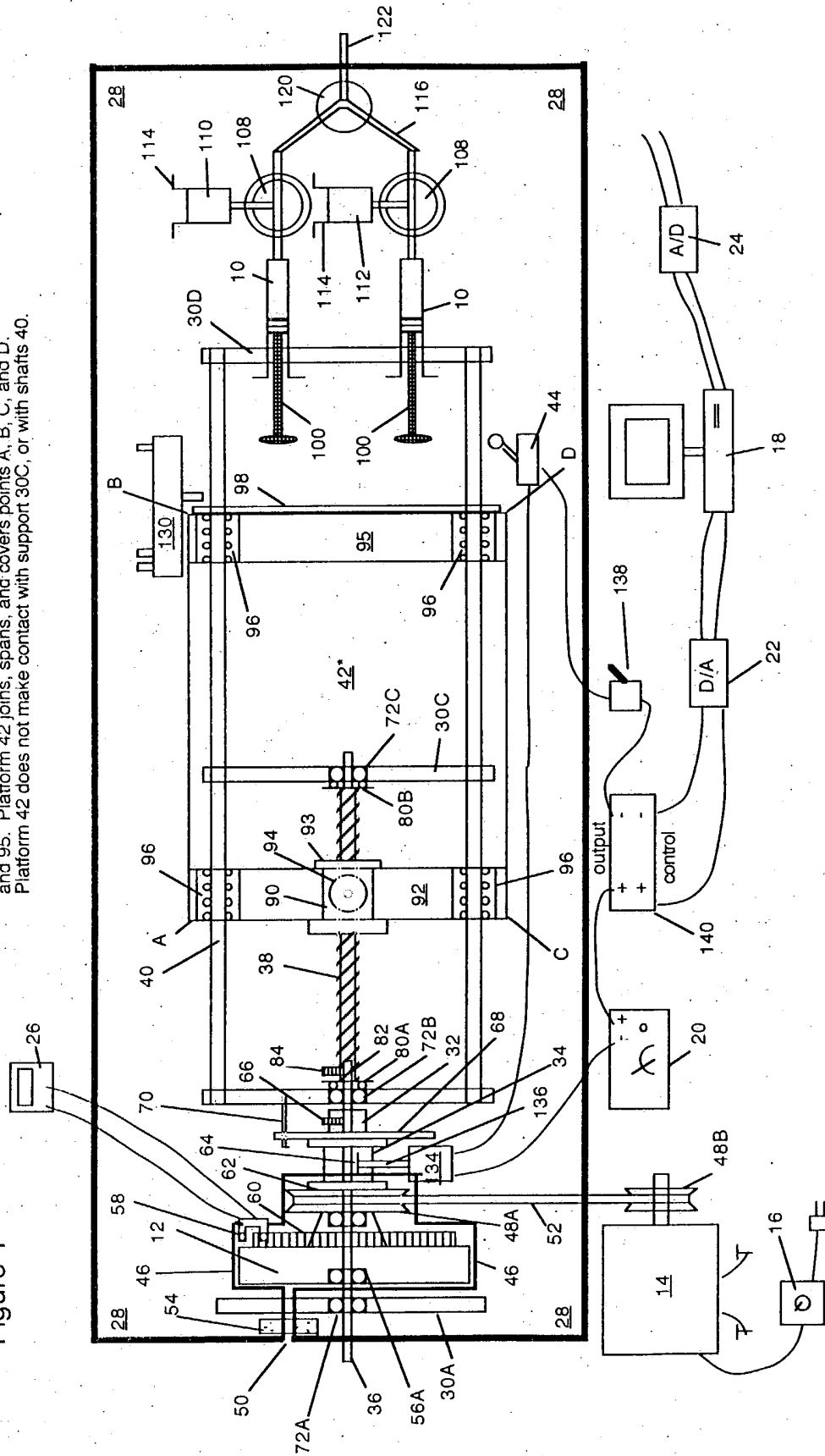


Figure 2:
Syringe - valve -
mixer - detector,
solution flow
system

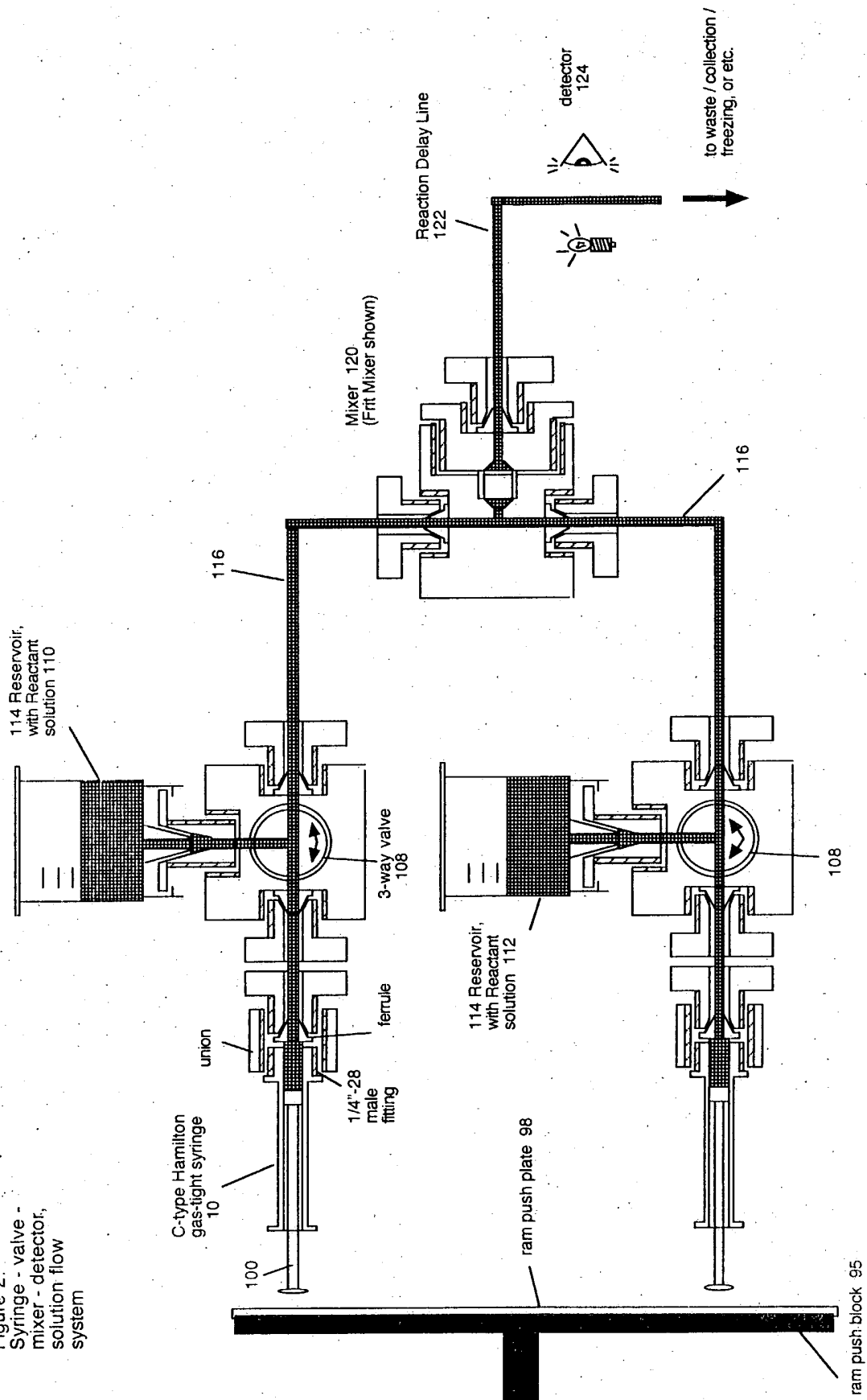


Figure 3:

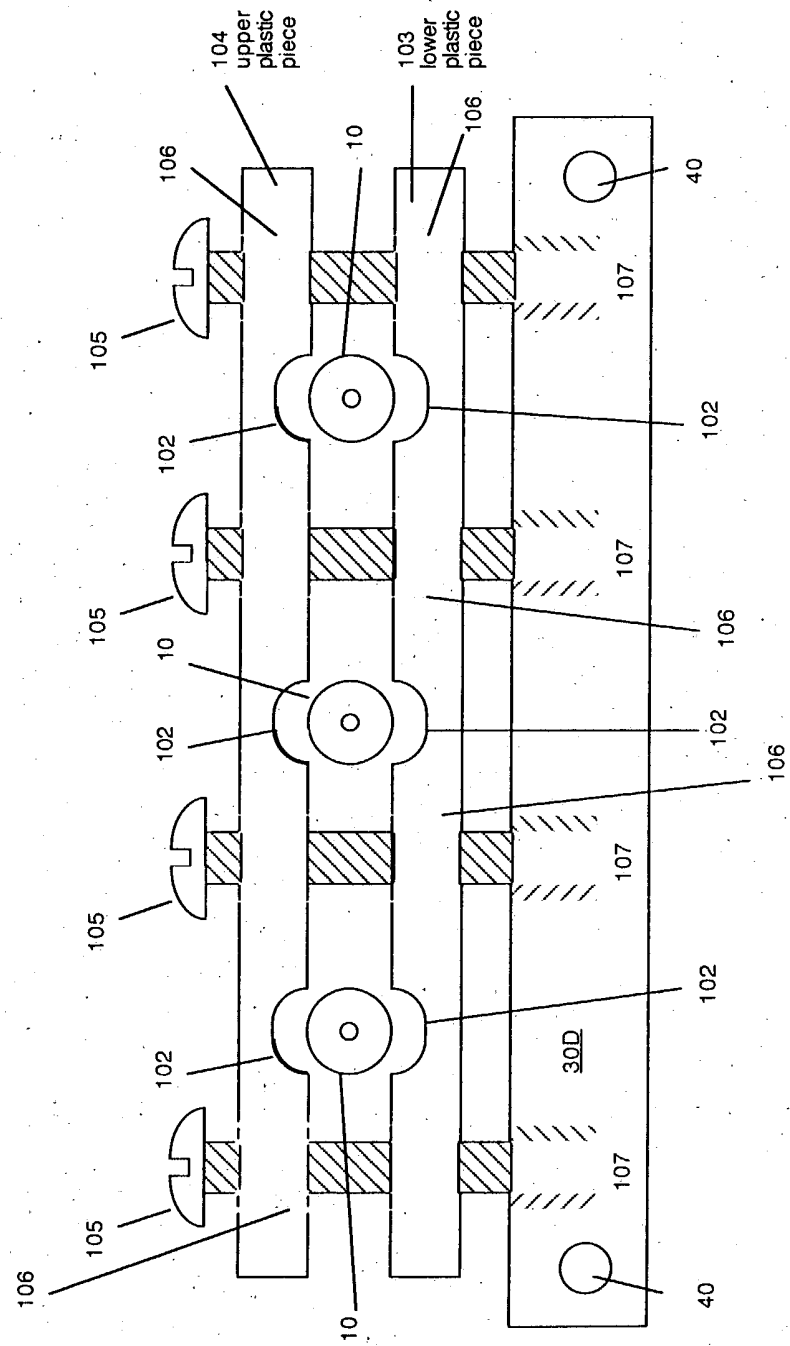


Figure 4A:

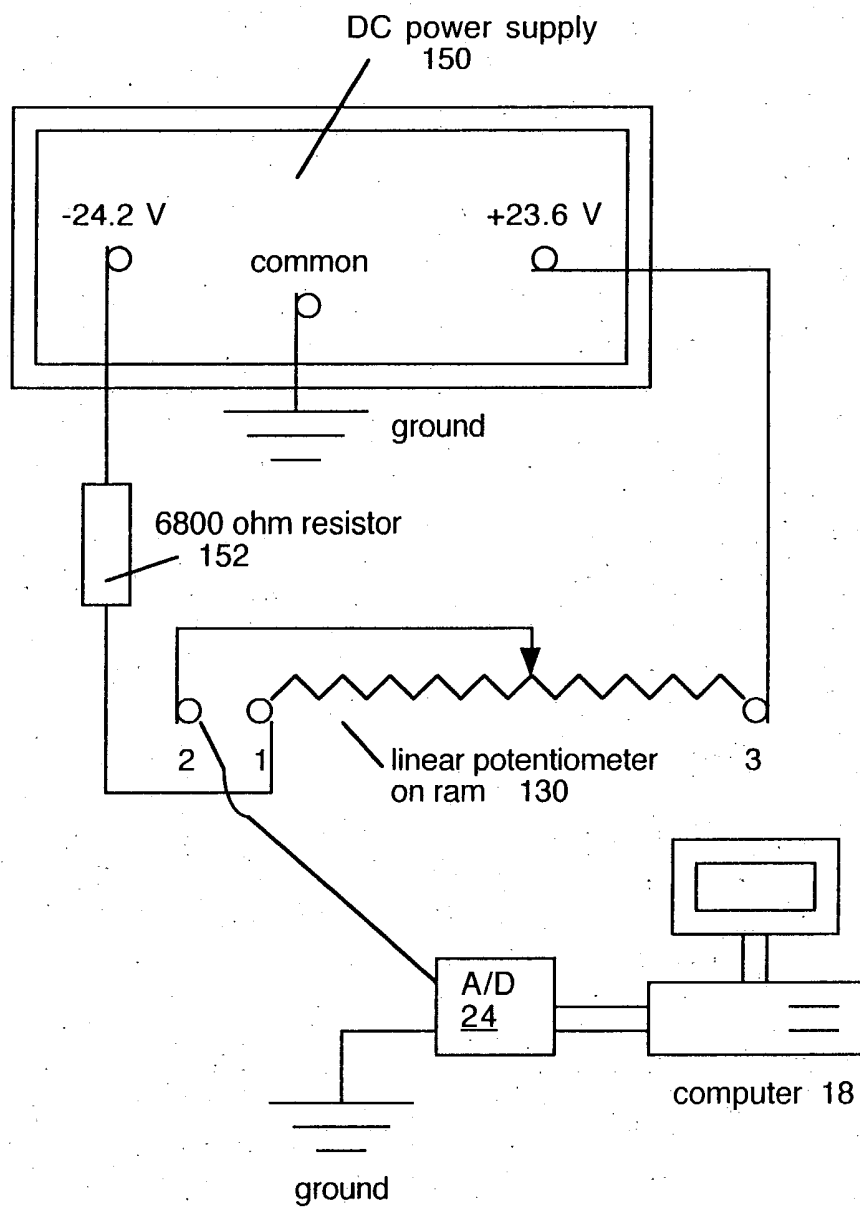


Figure 4B:

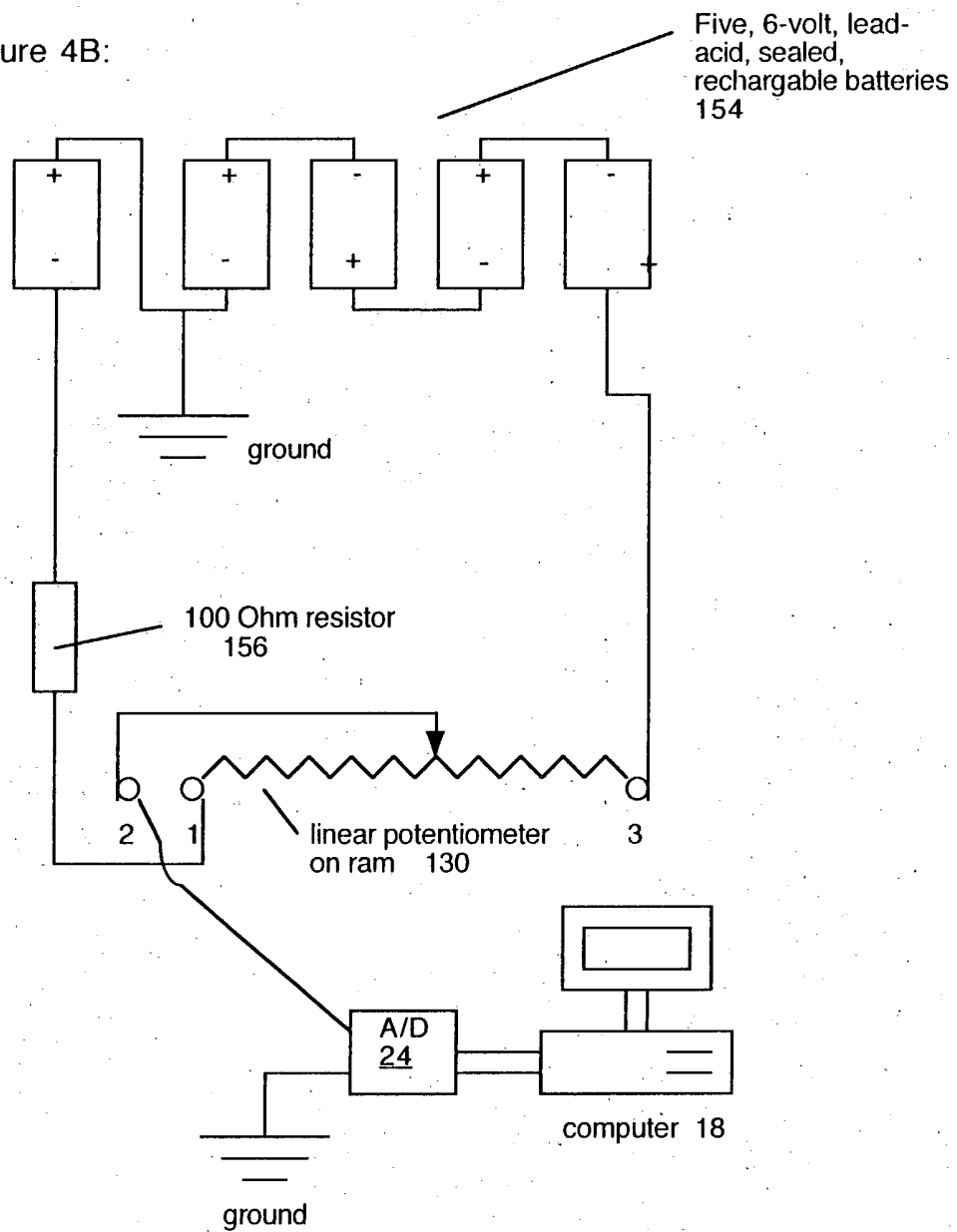


Figure 5:

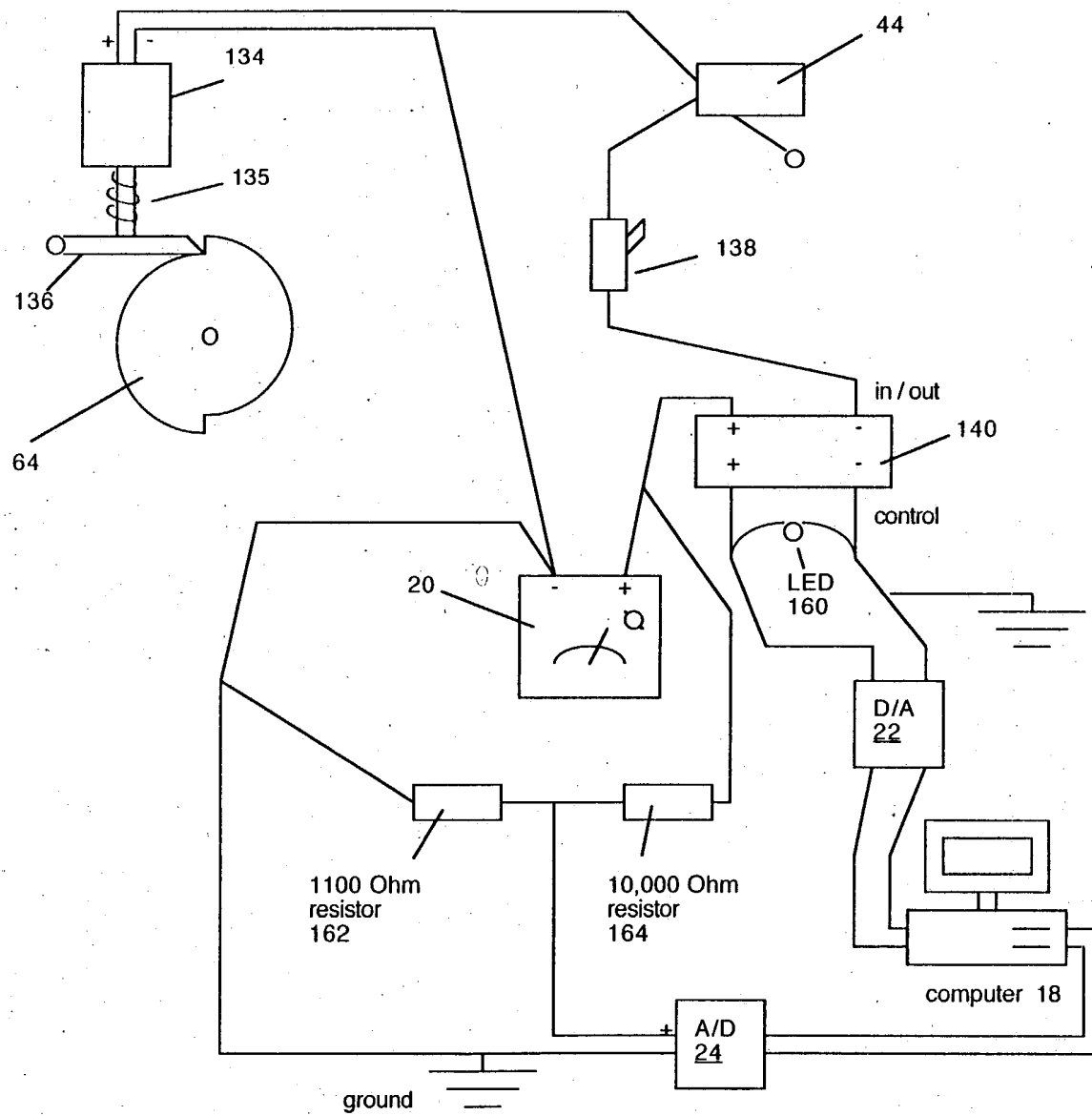


Figure 6:

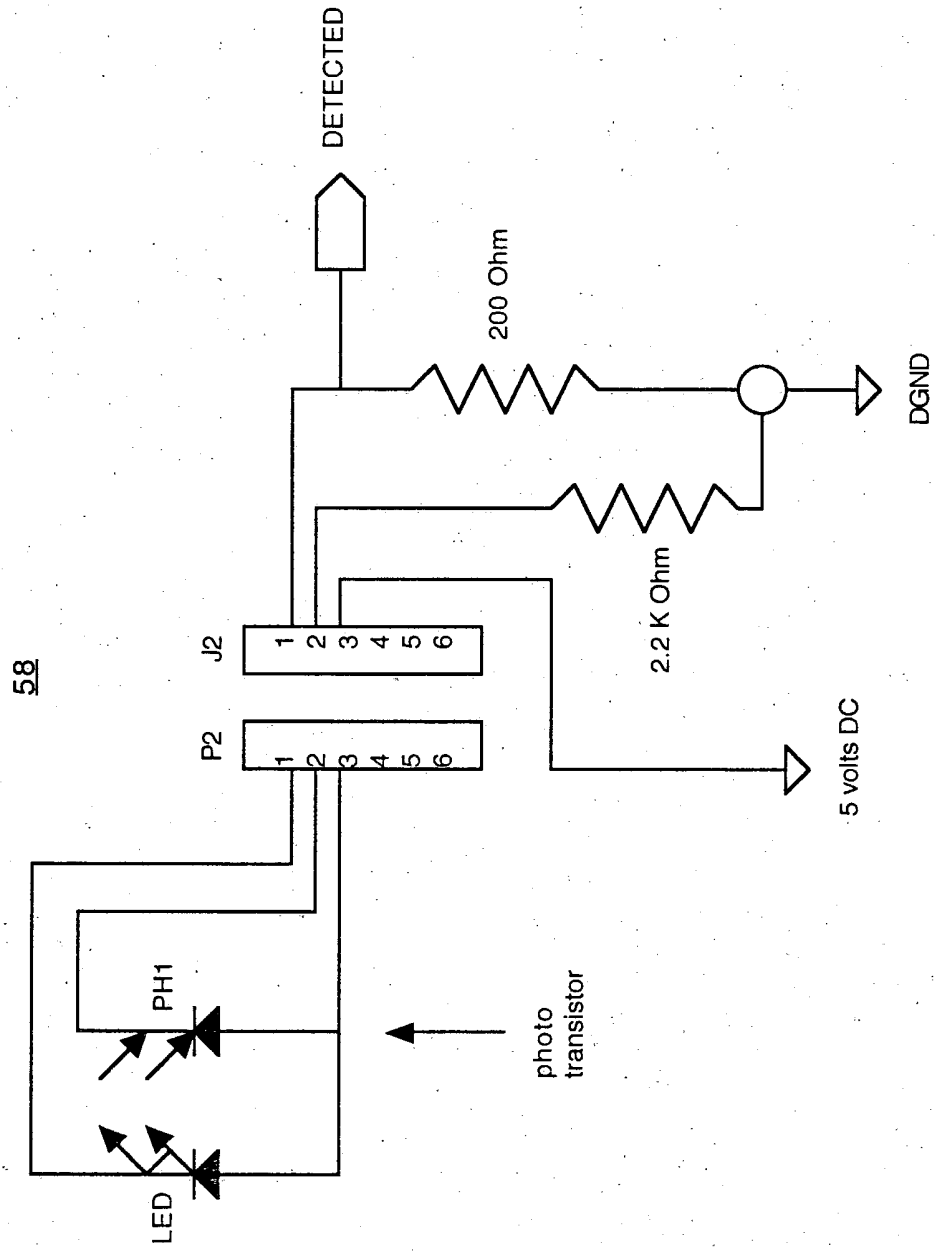
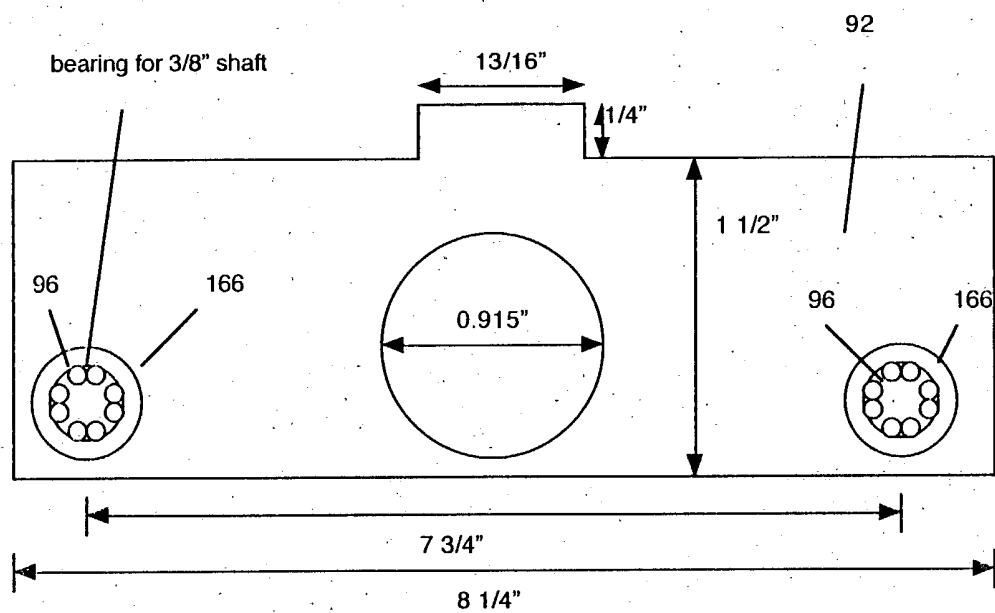


Figure 7:

7A. Rear Moving Block - Viewed from front or rear



7B. Rear Moving Block - as viewed from top

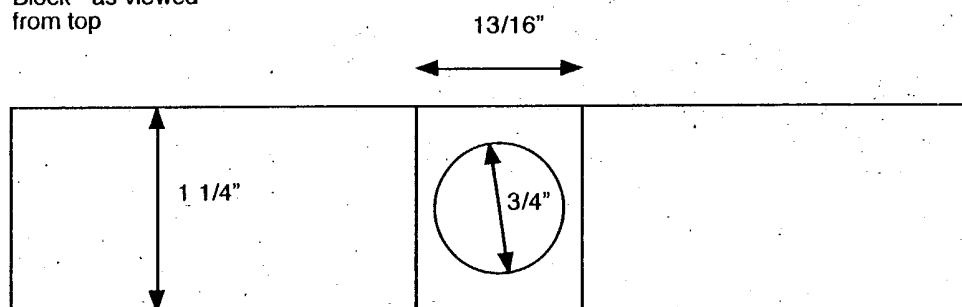
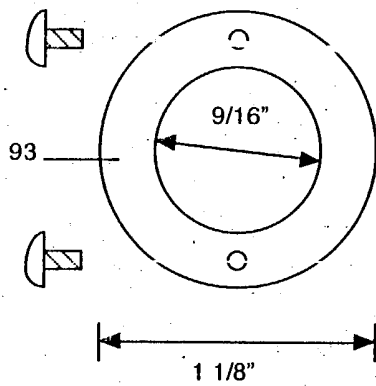
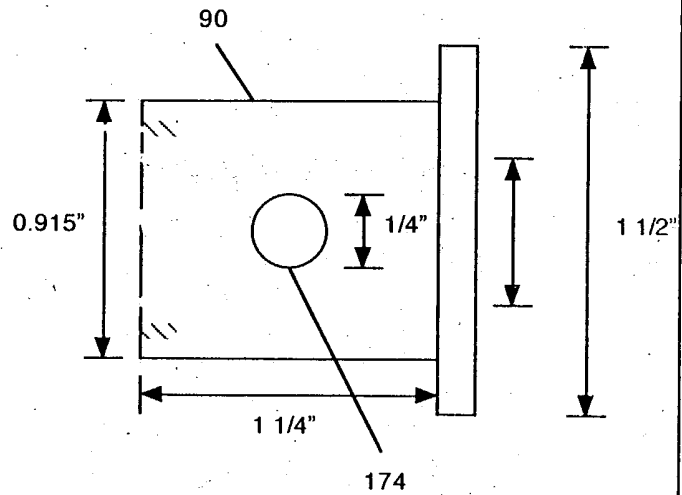


Figure 7, continued:

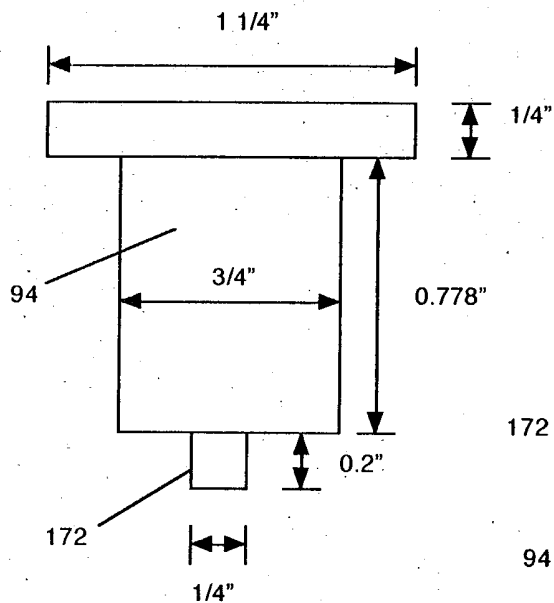
7C. Brass front end piece - 1/8" thick



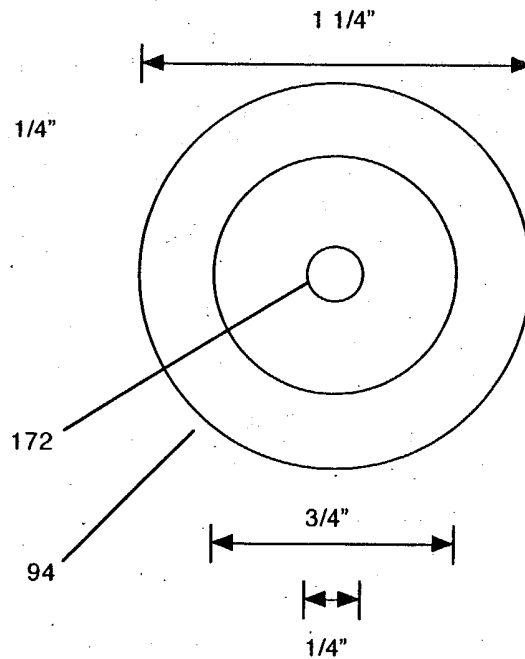
7D. Threaded Brass Nut



7E. Removable Brass Locking Pin



view from side



view from bottom

Figure 8:

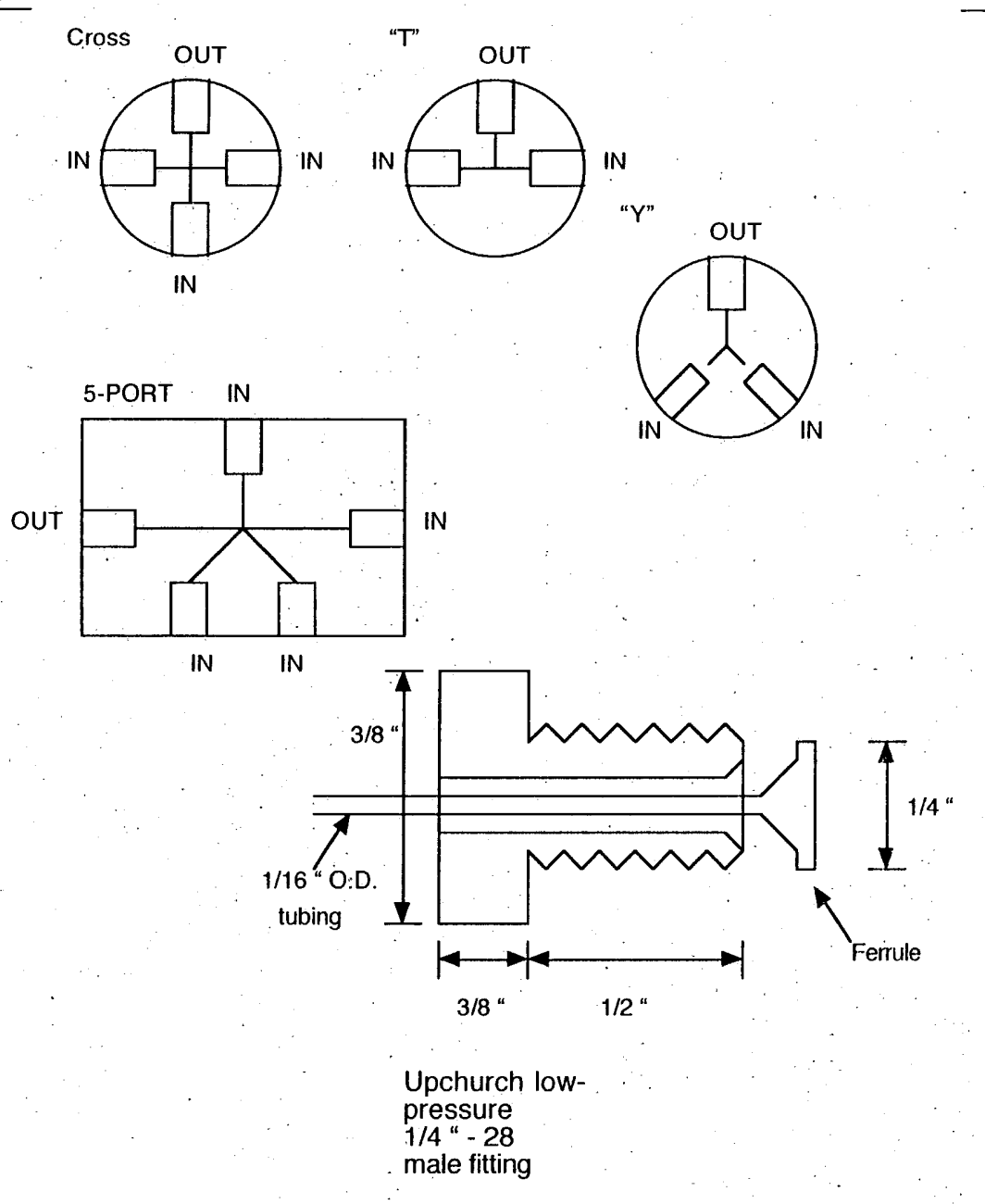


Figure 9A:

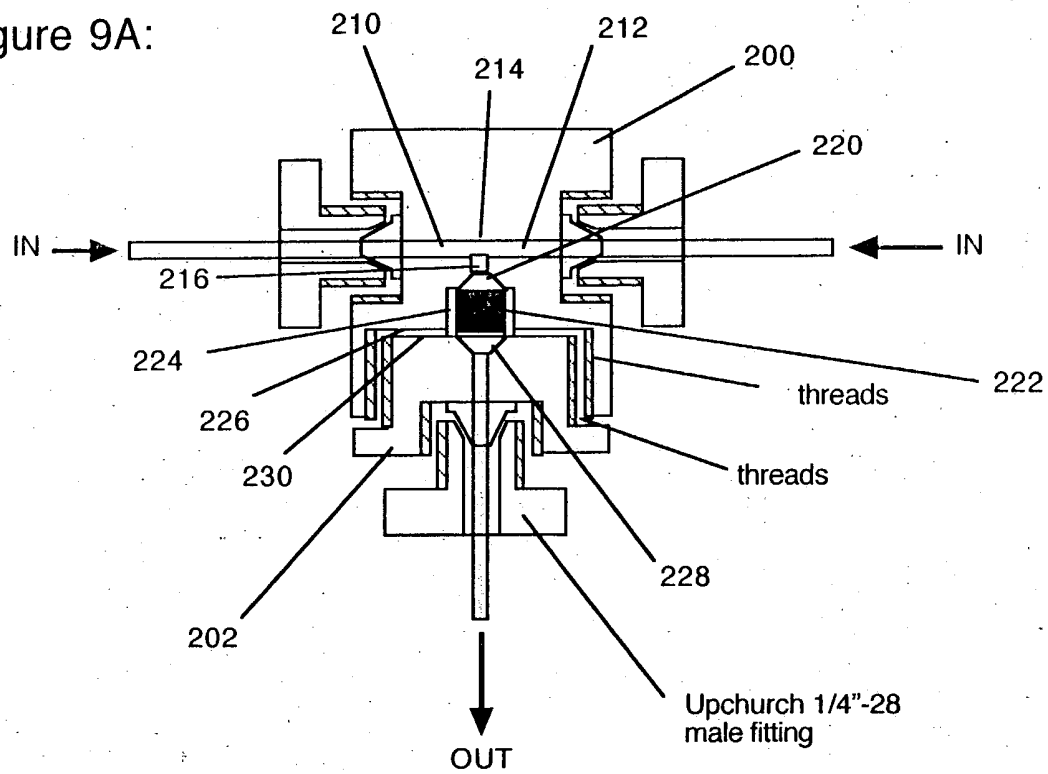


Figure 9B:

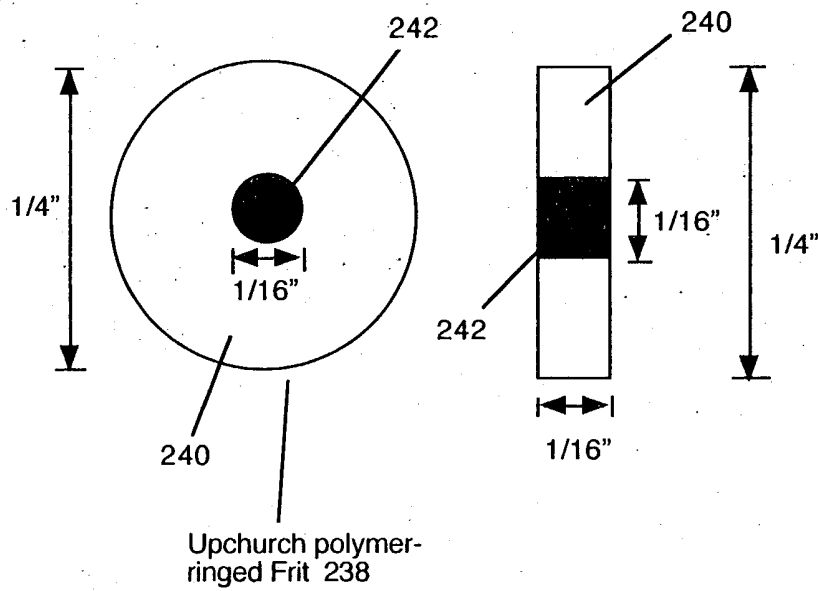


Figure 9B,
continued:

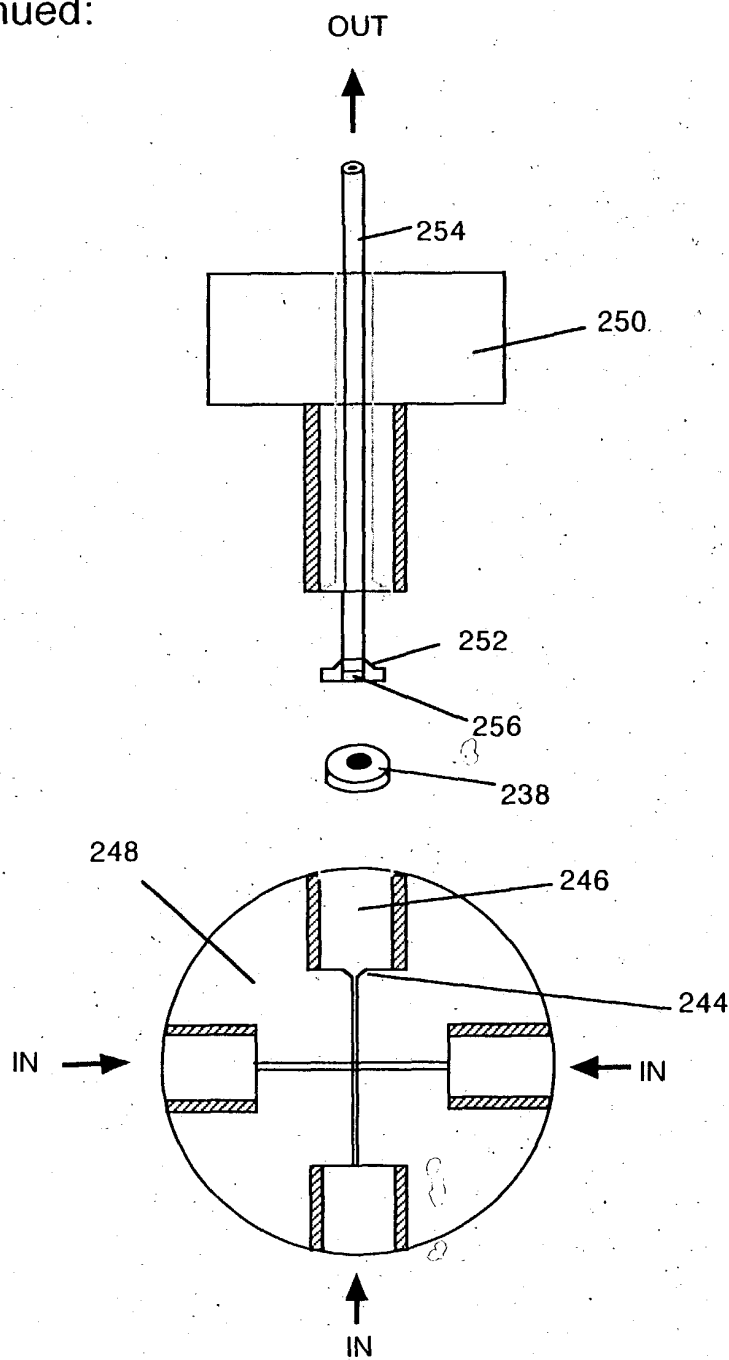


Figure 10:

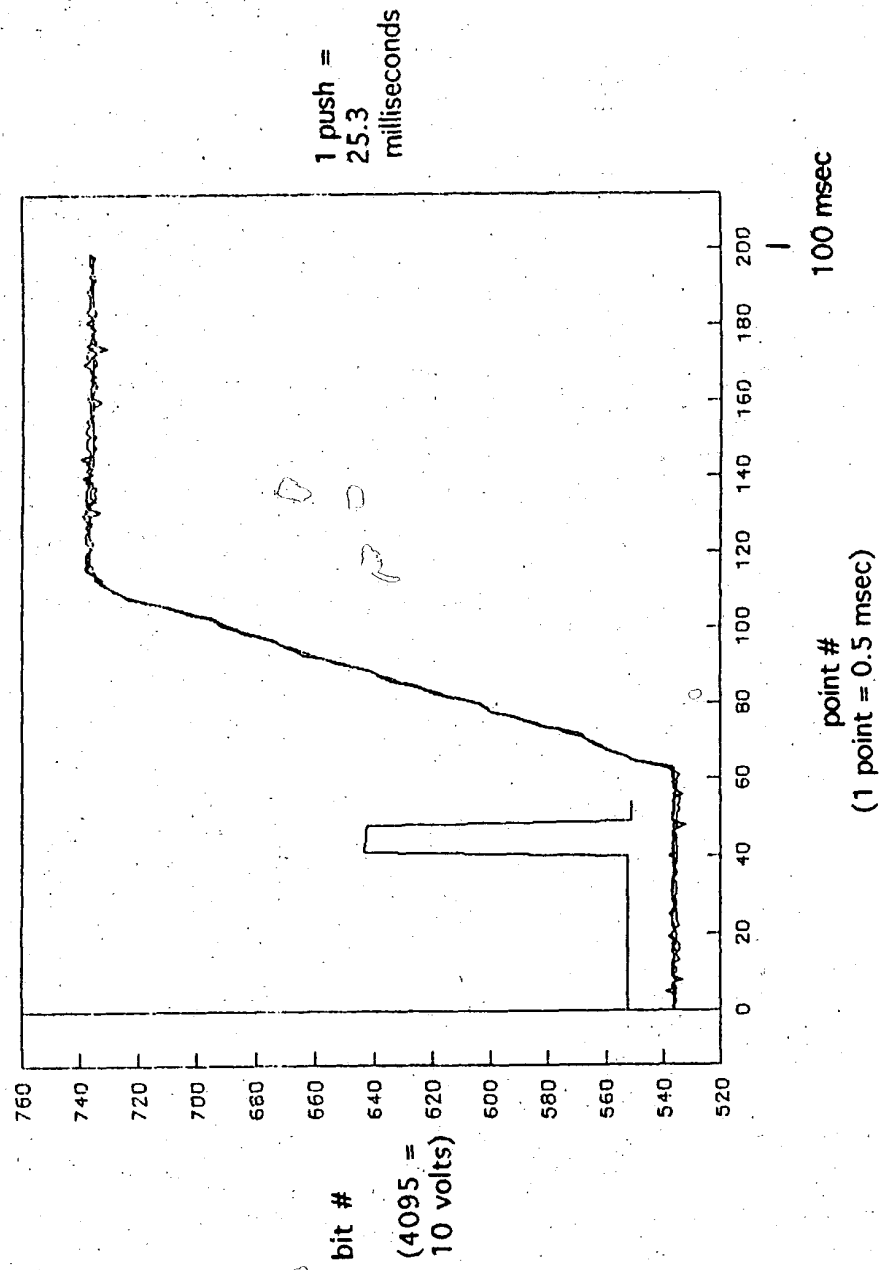


Figure 11:

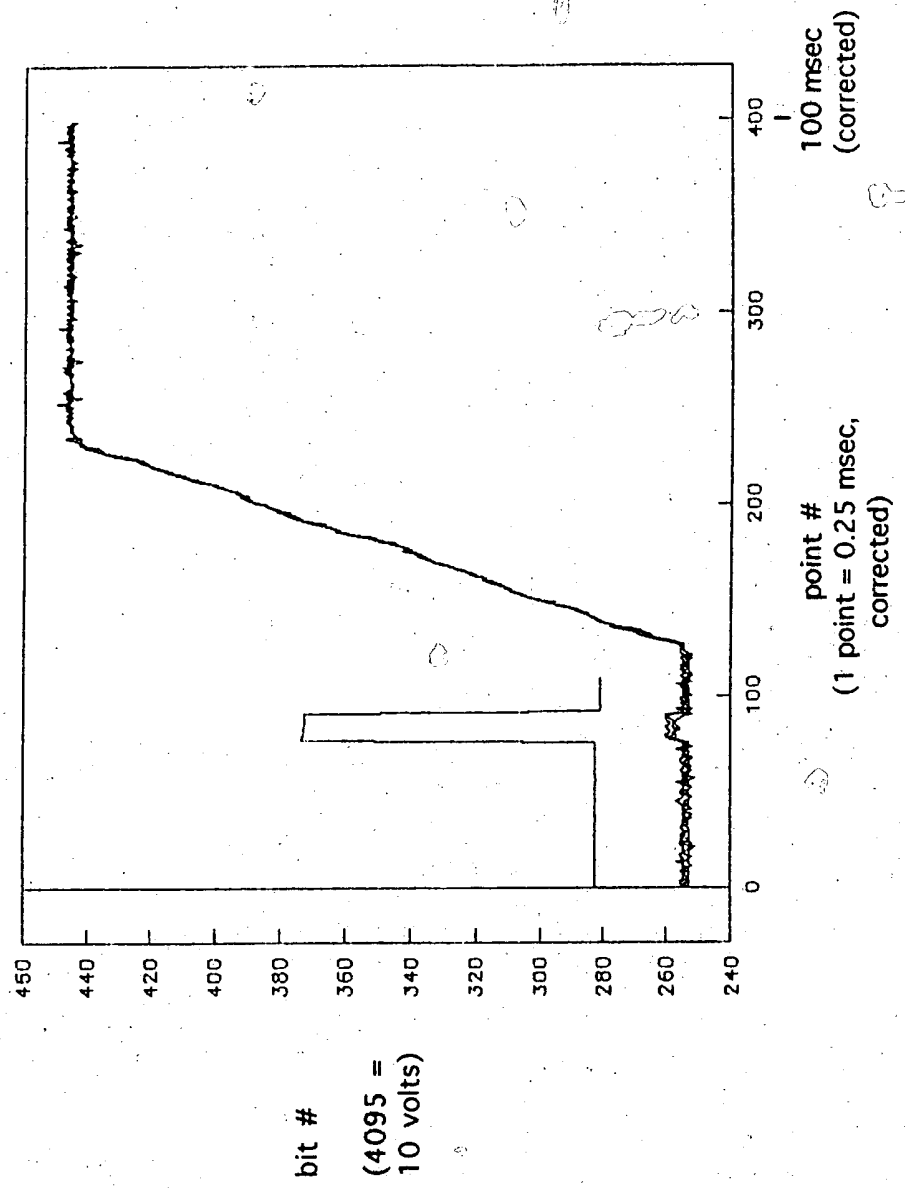
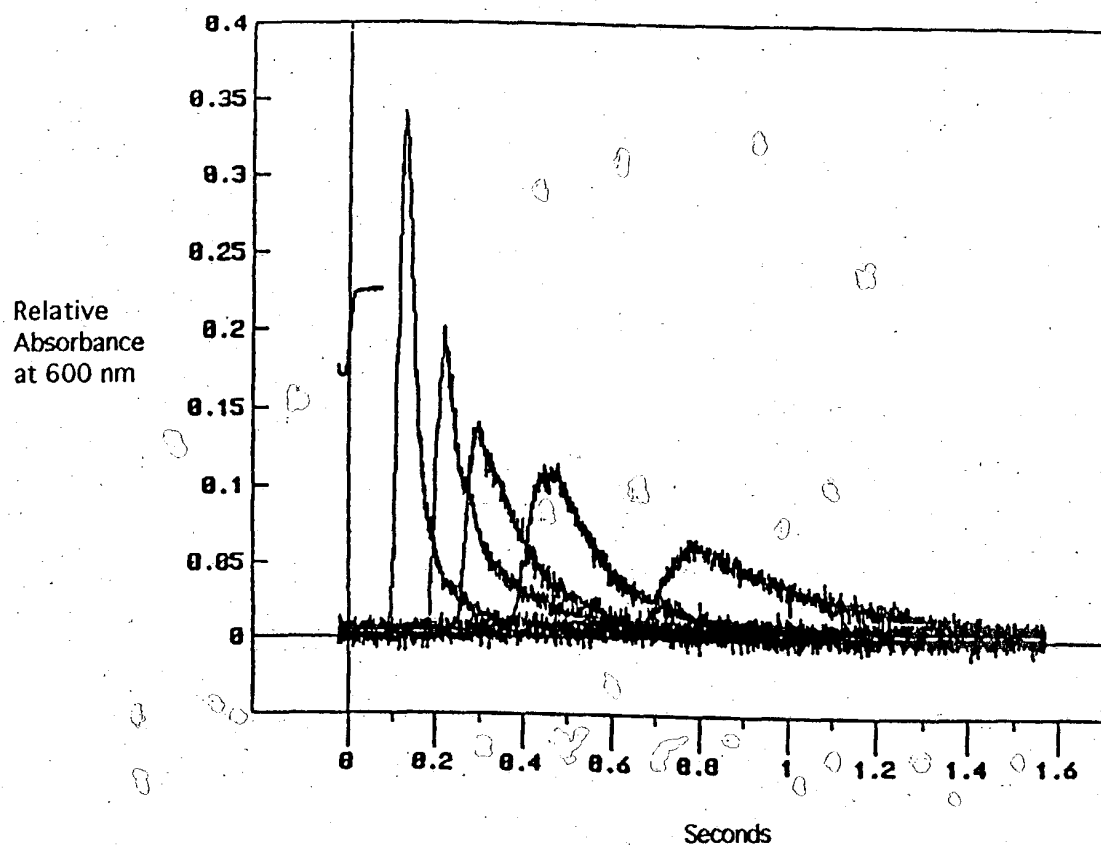


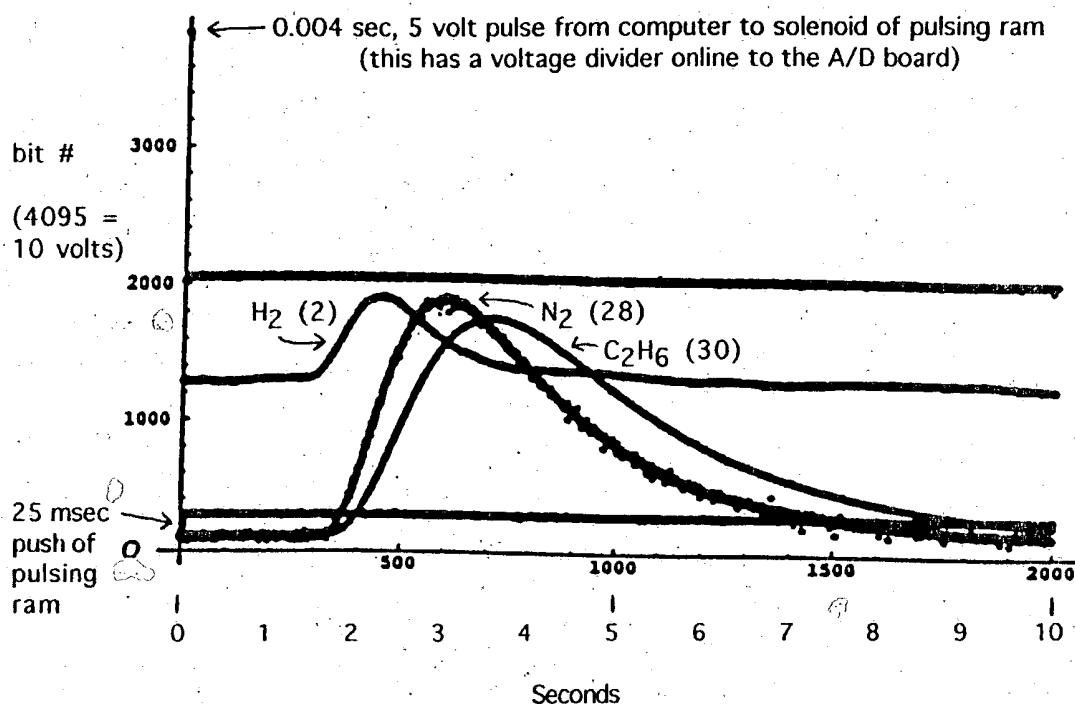
Figure 12:



Conditions:

- 1) Continuous laminar flow of carrier stream, Reynolds number (Re) = 821.
- 2) 0.025 second, pulse-injection of dye, centered at time zero.
- 3) Dye is bromphenol blue + HCO_3^- in water.
- 4) Reaction delay lines are 0.020" (0.5 mm) i.d., and of variable lengths.

Figure 13:



Conditions:

Enzyme syringe: H_2O equilibrated (vol/vol) with 93% N_2 , 5% H_2 , 2% C_2H_6 .

Total pressure = 3.7 atm.

Substrate syringe: omitted.

Carrier: (Argon-sparged H_2O . (No check valve in system.)

Reaction delay line: 2 meters long, 1.7 sec long, 0.022" i.d., 1/16" o.d., nylon.

Single pulse of ram.

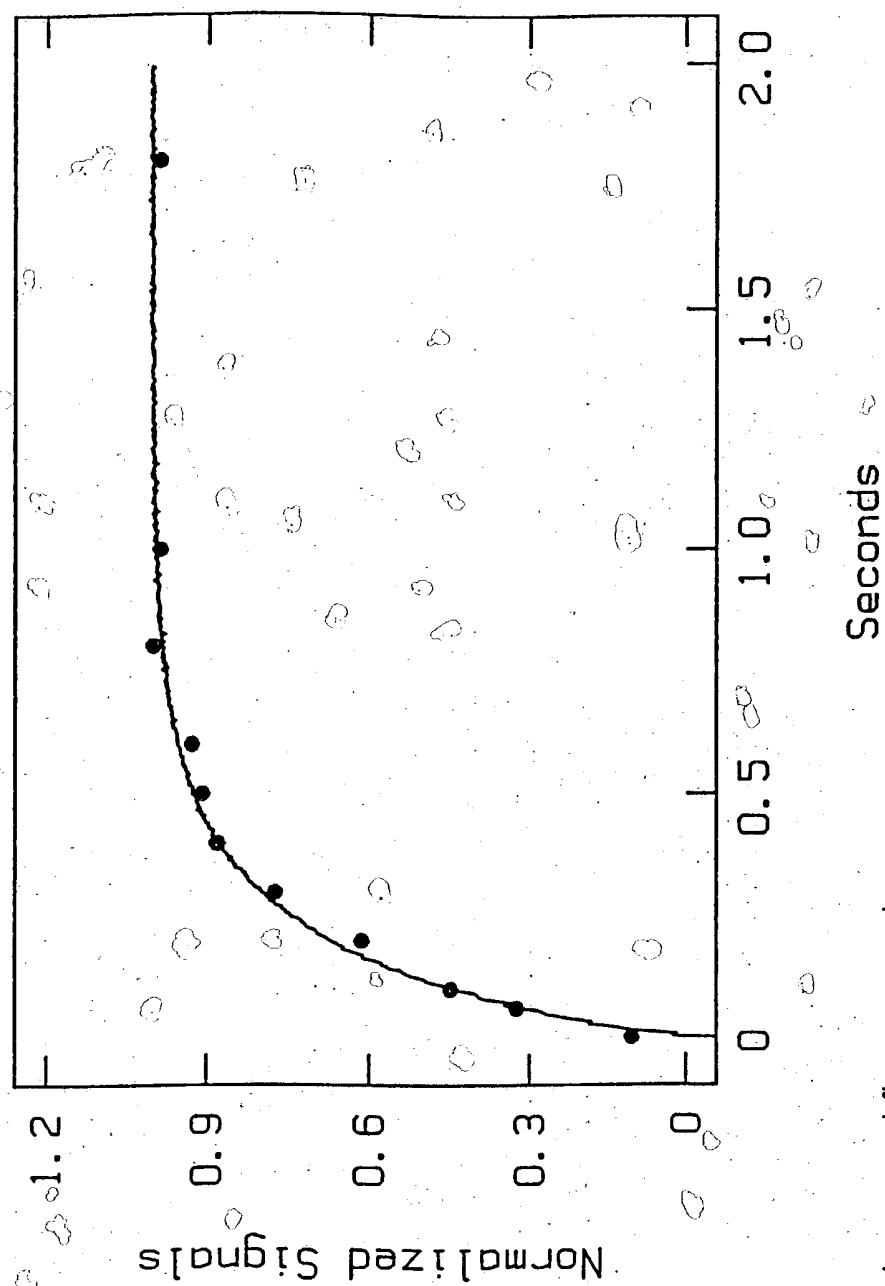
Sampling mass 2, mass 28, mass 30, all at 5 msec intervals.

Sampling computer output and ram displacement at 1 msec intervals.

Monitoring Five Channels Concurrently:

1. mass 2 (H_2)
2. Mass 28 (N_2)
3. Mass 30 (C_2H_6)
4. Computer output pulse to relay of ram.
5. Ram displacement.

Figure 14:



----- H^+ by stopped-flow spectrophotometry.
Monitoring brom cresol purple at 600 nm.

● CO_2 monitored by push-pause-push,
membrane inlet mass spectrometry.

Figure 15:

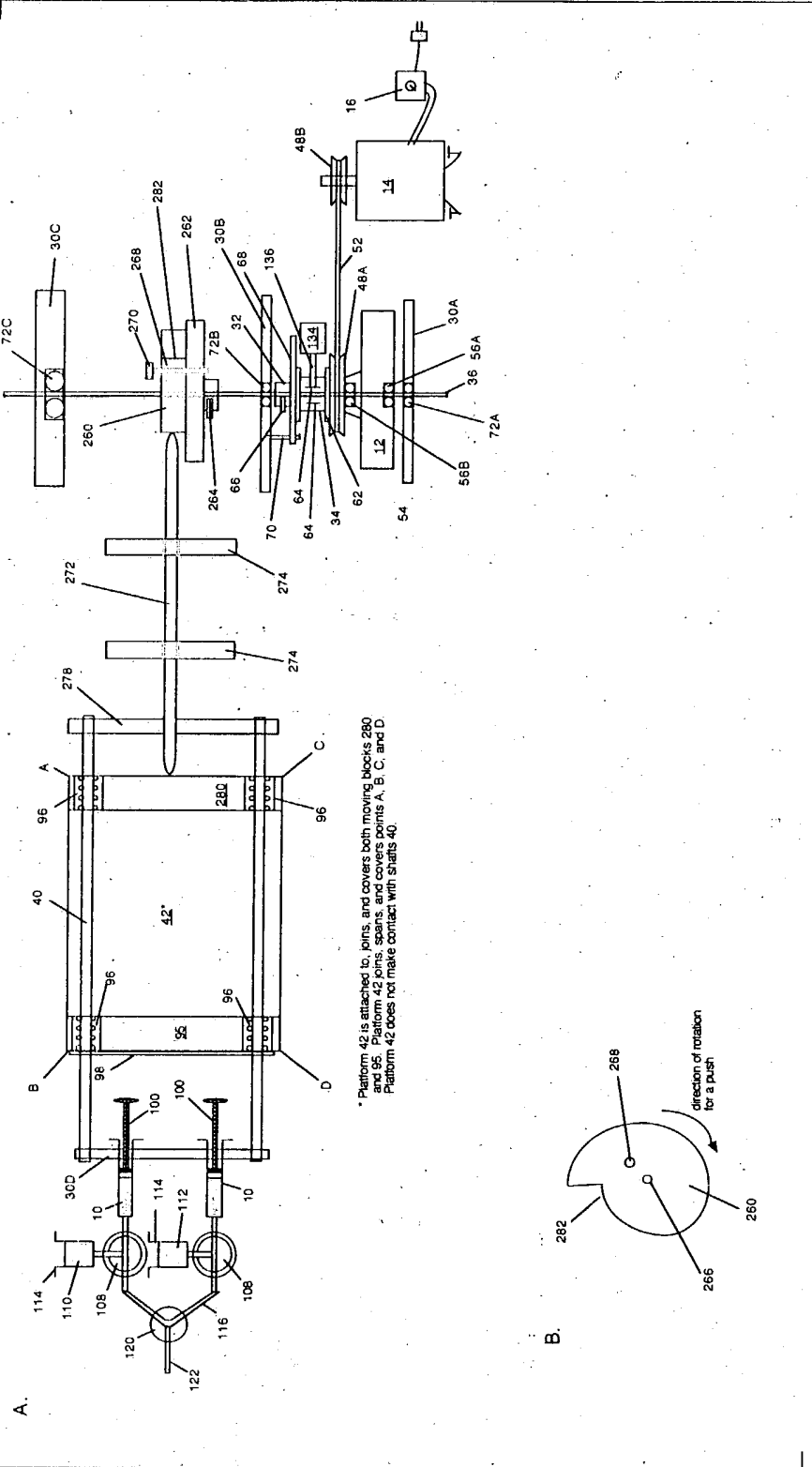


Figure 16A:

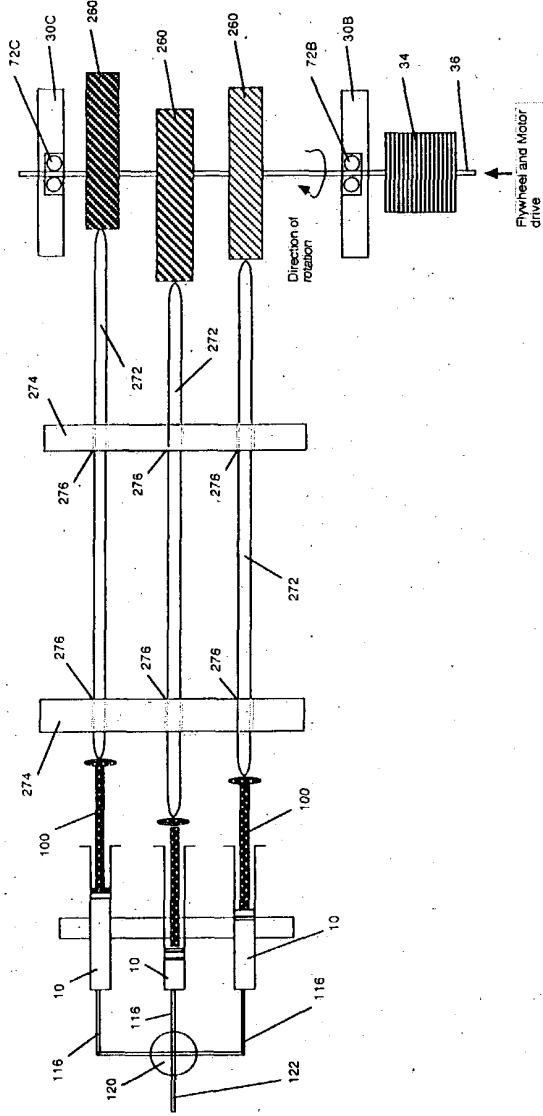


Figure 16B:

